7. REGULATIONS AND ADVISORIES

Because of its potential to cause adverse health effects in exposed people, a number of regulations and advisories have been established for naphthalene by various international, national and state agencies. These values are summarized in Table 7-1. No regulations or advisories were located for 2-methylnaphthalene.

The EPA has calculated a subchronic (<365) oral exposure RfD of $4x10^{-2}$ mg/kg/day[a] for naphthalene based on a NOAEL of 35.7 mg/kg/day for the absence of decreased body weight gain in rats exposed by gavage for 13 weeks (Battelle 1980b; EPA 1990b; HEAST 1992).

ATSDR has calculated an MRL of 0.05 mg/kg/day for acute (14 days or less) oral exposure to naphthalene based on a LOAEL of 50 mg/kg/day in female rats for clinical signs of neurotoxicity.

ATSDR has calculated an MRL of 0.02 mg/kg/day for intermediate duration (15-365 days) oral exposure to naphthalene based on a LOAEL of 5.3 mg/kg/day in female mice for inhibition of protein turnover and nitrogen excretion as urea.

ATSDR has calculated an MRL of 0.002 ppm for chronic (365 days or more) inhalation exposure to naphthalene. This MRL is based on a LOAEL of 10 ppm for chronic inflammation and hyperplasia of the lungs, and both inflammation and metaplasia of the respiratory passages, in mice exposed to naphthalene vapors for 2 years (NTP 1992a). The 10 ppm exposure concentration was normalized by adjusting for a 6-hour-per-day and 5-day-per-week exposure pattern. MRL derivation based on a Human Equivalent Concentration (HEC) methodology was not conducted because naphthalene did not fulfill the criteria for the application of this methodology (EPA 1990b).

ATSDR has calculated an MRL of 0.07 mg/kg/day for chronic oral exposure (365 days or more) to 1-methylnaphthalene based on a LOAEL of 71.6 mg/kg/day for alveolar proteinosis in mice (Murata et al. 1993).

TABLE 7-1. Regulations and Guidelines Applicable to Naphthalene

Agency	Description	Information	References
INTERNATIONAL			
IARC	Carcinogenic classification	Group 3 [a]	IARC 1995
NATIONAL			
Regulations:			
a. Air:			
OSHA	PEL TWA	10 ppm (50 mg/m^3)	OSHA 1995, (29 CFR 1910.1000, Table Z-1)
b. Water:			
EPA OW	Monitoring for unregulated contaminants	No	EPA 1987b
EPA OWRS	General permits under NPDES	No	40 CFR 122, (Appendix D, Table II)
	General pretreatment regulations for existing and new sources of pollution	No	40 CFR 403
c. Other:			
EPA OERR	Reportable quantity	100 pounds	EPA 1989d (40 CFR 302.4)
EPA OSW	Hazardous Waste Constituent (Appendix VIII)	No	EPA 1980b (40 CFR 261)
	Hazardous waste burned in boilers and industrial furnaces-residue concentration limit	10 mg/kg	EPA 1991a (40 CFR 266, Appendix VII)
	Land disposal restrictions	No	EPA 1988a, 1989e (40 CFR 268)
	Groundwater monitoring at municipal solid waste landfills	No	EPA 1991b (40 CFR 258, Appendix II)
	Groundwater monitoring list (Appendix IX)	No	EPA 1987c (40 CFR 264)
EPA OTS	Toxic chemical release reporting; community right-to-know	No	EPA 1988b (40 CFR 372)
	Health and safety data reporting	No	EPA 1988c (40 CFR 716.120)
Guidelines:			
a. Air:			
ACGIH	TLV TWA	10 ppm (52 mg/m^3)	ACGIH 1993
	STEL	15 ppm (79 mg/m^3)	

TABLE 7-1. Regulations and Guidelines Applicable to Naphthalene (continued)

Agency	Description	Information	References
NATIONAL			
Guidelines: (Cont.)			
NIOSH	REL TWA	10 ppm	NIOSH 1992
	STEL	15 ppm	
	IDLH	500ppm	
b. Water:			
EPA OW	Health Advisories		EPA 1994
	1-day (child)	0.5 mg/L	
	10-day (child)	0.5 mg/L	
	Longer term (child)	0.4 mg/L	
	Longer term (adult)	1.0 mg/L	
	Lifetime (adult)	0.02 mg/L	
c. Other:			
EPA	Carcinogenic classification	Group D[b]	IRIS 1995
STATE			
Standards or Guidelines:			
a. Air:	Acceptable ambient air concentrations		NATICH 1992
Arizona		630 µg/m^3 (1 hour)	
		400 µg/m^3 (8 hour)	
Connecticut		1,000 µg/m^3 (8 hour)	
Florida - Tampa		500 µg/m^3 (8 hour)	
Florida - Fort Lauderdale		500 µg/m^3 (8 hour)	
Florida - Pinella		500 µg/m^3 (8 hour)	
		120 µg/m^3 (24 hour)	
Maine		7,900 µg/m^3 (15 minute)	
		870 µg/m^3 (24 hour)	
		14.0 µg/m^3 (1 year)	
Massachusetts		14.3 µg/m^3 (24 hour)	
		14.3 µg/m^3 (annual)	
Nevada		1,190 µg/m^3 (8 hour)	
New York		167 µg/m^3 (1 year)	
North Dakota		520 µg/m^3 (8 hour)	
		790 µg/m^3 (1 hour)	
Oklahoma		50,000 µg/m^3 (24 hour)	
South Carolina		1,250 µg/m^3 (24 hour)	
Texas		440 µg/m^3 (30 minute)	
		50 µg/m^3 (annual)	
Vermont		120 µg/m^3 (annual)	
Virginia		870 µg/m^3 (24 hour)	
Washington		167 µg/m^3 (24 hour)	
Wisconsin		1200 µg/m^3 (24 hour)	

TABLE 7-1. Regulations and Guidelines Applicable to Naphthalene (continued)

Agency	Description	Information	References
STATE			
Standards or Guidelines:			
b. Water: Kansas	Drinking water quality standards	143 µg/L	FSTRAC 1990

[a] Group 3 = not classifiable as to its carcinogenicity to humans
[b] Group D = not classifiable as to its human carcinogenicity

ACGIH = American Conference of Governmental Industrial Hygienists; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; IDLH = Immediately Dangerous to Life or Health Level; NIOSH = National Institute for Occupational Safety and Health; NPDES = National Pollutant Discharge Elimination System; OERR = Office of Emergency and Remedial Response; OSHA = Occupational Safety and Health Administration; OSW = Office of Solid Waste; OTS = Office of Toxic Substances; OW = Office of Water; OWRS = Office of Water Regulations and Standards; PEL = Permissible Exposure Limit; REL = Recommended Exposure Limit; STEL = Short-term Exposure Limit; TLV = Threshold Limit Value; TWA = Time-Weighted Average